CHAPTER 10. COFFINS

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Coffin remains (wood and hardware) were by far the most ubiquitous artifacts recovered from graves at the African Burial Ground. In this chapter we report on the distribution of coffins among demographic and temporal groups and examine the historical context for coffin use. We then provide descriptive information on the shapes, sizes, material, construction, and decoration of coffins represented at the excavated cemetery. Finally, we describe the material remains that were recovered from coffins, and their treatment, identification, and quantification.

10.A. Presence/absence of coffins

As discussed in Chapter 5, the vast majority of the graves excavated at the African Burial Ground had coffins (Table 10.1; table includes burials for which presence or absence of a coffin could be determined, whether or not human remains were recovered). All of the children's graves had coffins. Of adults, 85.71% of our sample was buried in coffins. (See tables in Chapters 6 through 9 for coffin presence/absence by individual burial.)

Table 10.1.
Coffin presence/absence
by sex, age, and temporal group

	Count			Percent	
	with coffin	without coffin	total	with coffin	without coffin
Sex and age					
Male	83	22	105	79.0	21.0
Female	74	8	82	90.2	9.8
Adult- sex undetermined	29	1	30	96.7	3.3
Subadult	150*		150	100.0	0.0
Sex and age undetermined	16**	1	17	94.1	5.9
Total	352	32	384	91.7	8.3
Temporal Group					
Early	48	1	49	98.0	2.0
Middle	174	3	177	98.3	1.7
Late-Middle	51	3	54	94.4	5.6
Late	79	25	104	76.0	24.0
Total	352	32	384	91.7	8.3

*Excludes two subadults that were inside adult coffins.
**Includes one possible coffin.

As discussed in Chapters 4 and 9, the presence or absence of a coffin co-varied with spatial location within the excavated site and with the age and sex of the deceased – this patterning suggests that coffin-less burial took place in the context of economic and social disruptions during the Revolutionary War and British military occupation of New York (1776-1783). Prior to this, coffin burial appears to have been the norm in the African community of New York.[1]

In addition to the distribution of coffins by age, sex, and temporal group, we examined coffin presence/absence in relation to other types of artifacts. Burials with coffins were much more likely to have pins (66.5%) than those without coffins (20%).[2] It is possible that the presence of a coffin enhanced the preservation environment and therefore increased the survival of pins. However, a more likely explanation for the observed frequency distribution is that pins, like lumber for coffins, were in short supply during the war, and/or that refugees who died during the British occupation had no family to provide a shroud. As noted in Chapter 4, clothing and jewelry items were present in clear association with the deceased in six coffin-less burials, which argues against interpreting the lack of a coffin as strictly a function of poverty. Clothing and jewelry were actually somewhat more frequent proportionally in well-preserved coffin-less burials (6 out of 30 or 20%) than in well-preserved coffin burials (38 out of 284 or 13.4%). It is possible that in some cases the families of the deceased actually sold clothing or other items to pay for a proper funeral, *defined as including a coffin*. The co-variance of coffin absence and burial in clothing may support the idea that less investment was made in the preparation of the body for burial in these cases.

10.B. Coffin production and provision

Joiners, carpenters, and cabinetmakers typically built coffins in colonial and early-federal period American towns. These artisans were sometimes also "undertakers," providing other funeral accoutrements in addition to the coffin, as well as various services.[3] The

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[1] Our specific historical explanation for coffin-less burial as well as our chronological sequence contrast with those advanced for Newton Plantation in Barbados. There, the earliest (17th century) rather than the later (late 18th and early 19th century) burials were without coffins, and change over time in mortuary practice, with increasing adoption of coffins due to European influence, is suggested (Handler and Lange 1978:162, 192-3). We do not know if any of the burials excavated at the African Burial Ground are as early as the earliest graves at Newton Plantation -- the earliest New York graves may have lain outside the excavated area. It is possible that, as in Barbados, 17th century African burials in New York were without coffins, but our data do not speak to this or to the issue of European influences on the use of coffins.

[2] Percentages are based on 326 burials (296 with coffins, 30 without) where coffin presence/absence could be determined *and* preservation was "y" – there were also pins in 5 coffin burials and 1 coffin-less burial with "n" preservation.

[3] The more general term "joiner" referred to any woodworker. After about 1760, the term cabinetmaker came to refer specifically to men who made both furniture and coffins (Rauschenberg 1990:26). Upholsterers also served as undertakers though they did not build the coffins. Bells and palls for the procession; portable biers and coffin stools; decorations for the church; rings, scarves, and gloves to give out to mourners; and funeral foods and beverages are some of the items undertakers could provide. See Habenstein and Lamers (1981) on the history of American undertaking. The first "undertaker" to advertise

men who made and sold coffins in New Amsterdam/New York, and the enslaved and free laborers who worked in their shops, would have followed the artisanal traditions of their home countries and regions. Coffins were used commonly in Europe by the middle of the 17th century, and travelers' accounts from West Africa suggest their use there by the 18th century, though examples are known archaeologically only from the 19th century (Armstrong 1999:18). The ethnic backgrounds of coffin makers probably reflected the diversity of the town as a whole, and individual training and skill must have contributed to variation in coffin construction, so that coffin styles might be expected to vary from shop to shop. Still, based on historical and archaeological research, there was a very limited range of basic coffin styles used in the 17th and 18th centuries in the American colonies and in Europe.

As Julian Litten points out (1991:88), most specific information on English coffins prior to the 19th century has come from archaeological research and vault openings. Prints, drawings, paintings, sculpture, trade cards and advertisements also can provide details, and Litten (1991:89-90) provides information on early coffin shapes used in England based on such sources: gable-lidded coffins, four-sided and tapering toward the foot (i.e., trapezoidal) are depicted for the 14th through 17th centuries. This style was also used in 17th-century America, as proven at Carter's Grove (Noël Hume 1982). Gable-lidded, shouldered coffins are found in England from about 1575.[4] Litten (1991:99-100 and Plate 11) states both that the latter were common from 1600 to 1675, and that gable-lidded, trapezoidal types "gave way" to shouldered, flat-lidded types during 1660-1675. In his sample, coffins from the period 1725-1775 were "almost without exception" of the flat-lidded, shouldered variety – what we term "hexagonal" in this report. Litten does not specifically discuss flat-lidded, trapezoidal coffins. It seems possible they were the less-expensive versions of the gable-lidded, trapezoidal style. It should be noted that Noël Hume had difficulty finding actual examples of gable-lidded coffins from the 17th century, and states (1982:38) that the "hundreds" of coffins he examined in London vaults had lids "made from a single, wide board," so the flat-lidded variety may well have been the more common. Noël Hume does not suggest dates for flat-lidded, trapezoidal types.

If the shift to shoulder-shaped, flat-lidded coffins was indeed virtually complete in England by 1725, we may surmise that English cabinetmakers setting up shop in New York after that date would have produced wares in this style. The trapezoidal (four-sided tapering), flat-lidded coffins found at the African Burial Ground may represent an earlier and/or less-expensive style, a simple style resulting from lack of up-to-date training, or a style preferred by non-English coffin-makers. As noted, where graves are superimposed, burials with four-sided, tapered coffins usually pre-date burials with hexagonal-shaped coffins, so the hypothesis that the style shifted from the former to the latter over time is

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in colonial New York was a woman, Blanche White, who hailed from London and offered a range of services in 1768 (see the advertisement in Gottesman 1938:141-142).

[4] A surviving early example of the shouldered gable lidded coffin in wood (Litten 1991, Color Plate 11) is the Easingwold, Yorkshire parish coffin, dated to circa 1645, which has metal braces straddling the gable ridge (it is not clear whether these are original, however). The gable is quite shallow.

supported. If non-artisans built coffins on an as-needed basis with minimal tools and expertise, a simple style without shoulder or gable may have resulted.

We know that at least in some cases the master of a household was expected to provide the coffin for an enslaved member (and probably also for free or indentured servants or other dependents). Blacks who died at the Almshouse (presumably free persons or enslaved persons who had been handed over to the Almshouse when their slaveholders died) also were provided coffins, as least during the 1750s. Surviving records of New York cabinetmaker Joshua Delaplaine, covering a period from 1753-1756, list coffins made at his workshop (Delaplaine 1753-56). Delaplaine worked for a variety of customers, from wealthy merchants to the Almshouse warden. Thirteen orders for coffins for "Negroes" were recorded (Table 10.2). A basic adult coffin cost 11 or 12 shillings, perhaps based on size. Charges for two children's coffins were 4 shillings 6 pence and 5 shillings. The less expensive one was painted black; it may have been smaller in size.

Records from Charleston also indicate that coffins were frequently "blacked," and that no other color was used to paint them (Rauschenberg 1990:38). The black paint apparently usually added a shilling to the cost of a coffin; screws and rosin added one or two shillings each; and an extra-large size increased the price by a shilling. Thus Christopher Fell's bondwoman received the fanciest and most expensive of the "Negroes" coffins, at 14 shillings; it included screws, rosin, and paint.

Compared with other entries in the Delaplaine workshop's records, the prices paid for most of the blacks' coffins were at the very low end, reflecting the use of few embellishments and presumably the less-expensive woods. Handles, breastplates or other lid decorations, linings, and special wood increased the price for many of the coffins Delaplaine furnished for deceased whites. Examples include a child's coffin 4'3" in length, covered and lined in Holland cloth and "trimmed with polisht nails" for £3.10; a coffin for a woman covered, fully trimmed, and lined with sasinet for £5; bilsted (liquidambar) coffins for children at 11 shillings lined and 7 shillings unlined; a man's coffin covered and lined with a breast plate on the lid for £3.15; a child's coffin lined and "struck with name & age" for 14 shillings; and a man's coffin of bilsted with a heart, name, age, and date "struck" on the lid for £2.2. The term "struck" probably refers to forming the letters and numerals in nails or tacks.

At the very end of our period, the cost of a basic coffin had apparently risen slightly. A 1796 price list (Table 10.3) informs us that standard lengths, at 6-inch increments, were sold. Prices were set according to size, with the cost rising 1 shilling 6 pence per 6" of length up to 5 feet.[5] A shilling was charged for putting on handles, sixpence for a breastplate (exclusive of the cost of these coffin furniture items themselves).

[5] The coffin prices, from the *Cabinet-makers Philadelphia and London Book of Prices*, are reprinted in Rauschenberg (1990:34). Since we do not know the types of wood represented in either the Delaplaine accounts for "Negroes" coffins or the 1796 price list, we cannot be certain whether the price differential was due to inflation or to different materials, or to a change in the availability of wood.

Table 10.2.
Coffins for Africans made by Joshua Delaplaine

Date	Person Placing Order	Description	Cost
Nov. 14, 1753	Joseph Ryal	"coffin for his negro boy"	10s
Jan. 22, 1754	Abraham Leffer[t]s*	"coffin for Jane a negro" (poorhouse)	11s
Mar. 27, 1754	Robert Livingston	"a large coffin for his negro"	12s
Apr. 30, 1754	Abraham Lefferts	"coffin for Mo[lly?] a negro"	11s
Aug. 6, 1754	Christopher Fell	"black coffin for his negro woman rozind & with screws"	14s
Dec. 20, 1754	Daniel Gomez	"coffin for his negro woman"	12s
Mar. 4, 1755	Caleb Lawrence	"coffin for his negro child"	5s
"	Robert Griffith	"coffin for his negro man"	12s
July 9, 1755	Christopher Fell	"coffin for a negro woman"	12s
July 19, 1755	Caleb Lawrence	"rough coffin for Joseph Castins negro"	9s
Aug. 12, 1755	Estate of Peter Vergerau	"coffin for negro woman w/screws"	13s
Aug. 27, 1755	Thomas Dobson	"coffin for his negro girl"	11s
Feb. 29, 1756	John Stephens	"black coffin for a negro child"	4s 6d

*Abraham Lefferts, one of the two city Church Wardens, placed numerous orders for coffins for the poorhouse, two of which were for deceased black inmates.
Source: Delaplaine (1753-56).

Table 10.3.
Coffin prices, 1796

Coffin Length:	Price: (£.s.d)
2'	0.6.6
2'6"	0.8.0
3'	0.9.6
3'6"	0.10.6
4'	0.12.0
4'6"	0.13.6
5'	0.15.0
Above 5'	0.18.0
Above 5' of poplar, deduct:	0.3.0
Putting on handles	0.1.0
Putting on breast plate	0.0.6
Full trimming w/lace	0.1.6

Source: Rauschenberg (1990:34).

The provision of a coffin may not always have been the duty of a household head. For some, maybe most, enslaved Africans, and for free persons, it might have fallen to family and friends to see to the coffin. The prices listed would have had to be paid to the woodworking shops, or else materials and labor would have had to be donated. Many blacks worked for and as cabinetmakers and carpenters in early New York, so their access to tools and materials may have been relied on.

In addition, participation in own-account economic activities would have afforded some the means of purchasing coffins outright. Also, as suggested in Chapter 2, the existence

of informal burial societies probably pre-dates the formal establishment, in the late 18th and early 19th centuries, of mutual aid societies in New York. The primary benefit of such societies would have been provision of a proper burial, with a coffin.

10.C. Coffin variation at the African Burial Ground

Coffin shape

As shown in Chapter 4, coffin shapes at the African Burial Ground were shouldered (hexagonal), tapered (sometimes called trapezoidal), and rectangular. Many small and poorly preserved examples are simply listed in the database as "four-sided" (i.e., though the shoulder bend could be ruled out, it could not be determined whether they were rectangular or trapezoidal). One exception (Burial 257) appeared to be eight-sided, the head comprised of two boards that came to a point. Many coffins that were poorly preserved were tallied as tentative (indicated by a question mark). Table 10.4 lists coffin shapes, including uncertain ones, by general age category.[6]

Table 10.4.
Coffin shape by age category

Shape	Adult	Sub-adult	Undet.	Total
four-sided	8	16	1	25
four-sided?		4	1	5
tapered	20	13		33
tapered?			1	1
rectangle	2	15	2	18
rectangle?	3			3
hexagonal	109	54	2	163
hexagonal?	5	15		20
other	1			1
unident.	38	33	9	76
Total	186	150	16	352
See Table 10.1 for explanations of totals.				

Some of the coffins had footboards that sloped outward toward the top. Fourteen of these were made note of and drawn in cross-section at the time they were excavated (a drawing is reproduced in the section on coffin construction), and examination of drawings for *in situ* nail locations indicates there were at least five additional examples. This feature was found in coffins of both tapered and shouldered varieties, and in all time periods. It was probably a common variant. The sloped-foot coffins identified thus far were in Burials 23, 31, 40, 44, 48, 51, 68, 71, 100, 130, 145, 151, 241, 266, 299, 321, 354, 416, and 418.

There was no evidence of gable-lidded coffins at the African Burial Ground. Such coffins would have had a distinctive pattern of nails aligned down the centerline of the lid, as did those at the 17th-century Martins Hundred site in Virginia (Noël Hume 1982:38-39, 70), and either the head and foot boards would have been gable shaped or the lids would have had gable ends. Hexagonal, gable-lidded forms in North America seem to date to the 19th as well as the 17th century. Fourteen of nineteen identifiable coffin shapes from Philadelphia's First African Baptist Cemetery excavation were gable-

[6] Two subadults were buried inside adult coffins – the coffins are listed under the adult category in Table 10.4.

lidded (Parrington et al. 1989:144). Gabled coffins are more complex in construction, requiring additional boards and five-sided ends. We were particularly interested in determining whether any of the four-sided coffins we believe to be earliest had gable lids. Field drawings for all of the four-sided coffins from our sample were examined carefully for evidence of this form, but none was found. In the best-preserved and recorded examples (Burials 18, 23, 68, 78, 177, 202, 221, and 282—see drawings in Volumes 2 and 3), the head and footboards had straight-cut, top edges and no centerline nails were found. There is no evidence that head or footboards were shaped to fit a gable lid.

The identification of four-sided, tapering (trapezoidal) adult coffins as earlier than hexagonal coffins is based on analysis of archaeological data, mainly stratigraphic relationships.[7] Information on changing coffin shape over time, though not conclusive, supports the use of shape to seriate the coffins, and of the trapezoidal variant to characterize the earliest group. Thus all adult coffins of the Early Group were, by definition, four-sided, mainly tapered, though two were identified as *possibly* rectangular and eight can only be characterized as "four-sided." For later groups, adult coffin shapes (when clearly defined) were mostly hexagonal, with just four exceptions: two from the Late-Middle Group were rectangular; one from the Late Group was possibly rectangular; and one Late Group coffin (Burial 207) appeared to be tapered.

Coffins of children and infants were much more variable in shape than those of adults. The distribution of children's coffins by age group is shown in Figure 10.1, and by temporal group in Figure 10.2. Coffins of young children were more variable in shape than those of older children (though numbers are small). Also, while hexagonal coffins were the most common shape for children in the Middle to Late Groups, four-sided varieties remained in use, accounting for 23.7% of the total. Based on these observations we suggest that children's coffins were more likely to be made by families rather than purchased from workshops, hence a lack of the standardization seen in adult coffins. Coffins for the youngest children and infants were most likely to be homemade.

Coffin size

Coffin measurements (maximum length and width) were recorded in the field for most burials, but since we were only interested in tabulating sizes of whole coffins we used the final burial drawings to obtain length, width and head-to-shoulder measurements. This information is presented in Appendix J. The distribution of coffin lengths is shown in Figure 10.3. One question that we wished to address was whether coffins seemed to be constructed "to order," in other words made-to-measure, for individuals or, alternatively, represented standard sizes built from a limited set of templates or kept in stock by coffin

[7] As discussed in Chapter 4, we initially thought that all four-sided adult coffins might have been in use earlier in our sequence than the six-sided ones, but upon examination of the stratigraphic evidence the rectangular variant appeared to be used later as well.

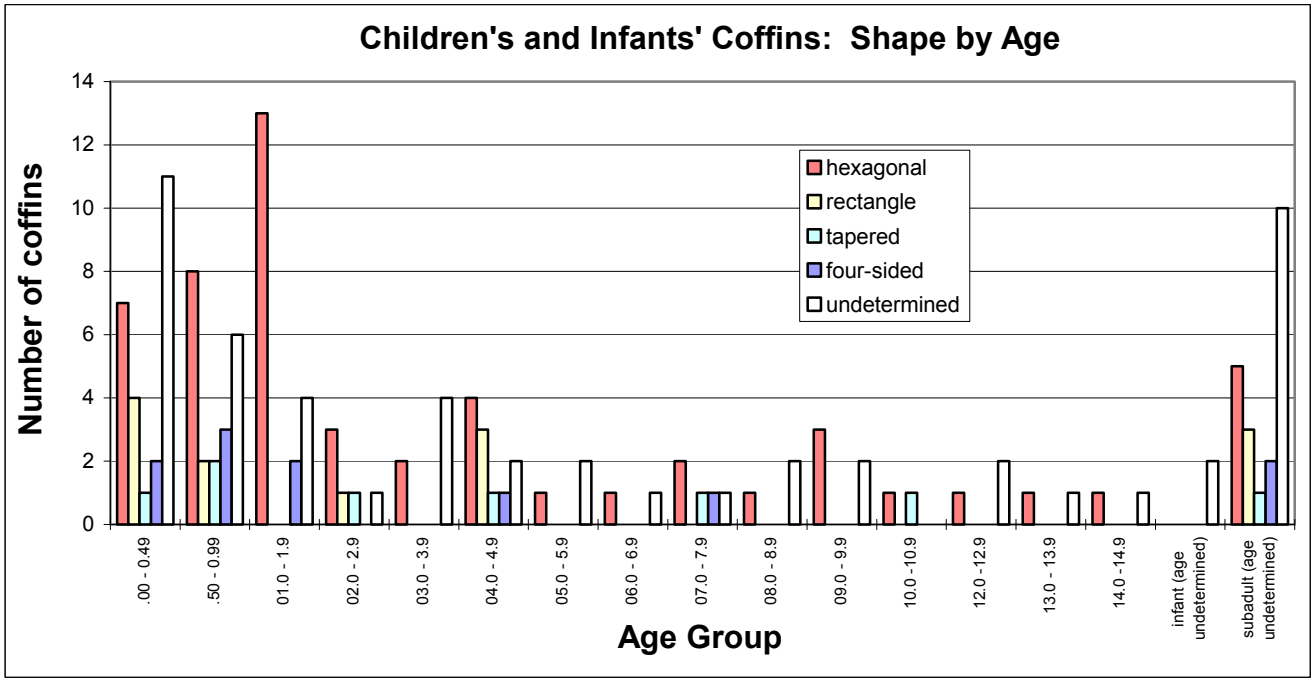

Figure 10.1.
Shapes of children's and infants' coffins by age bracket.

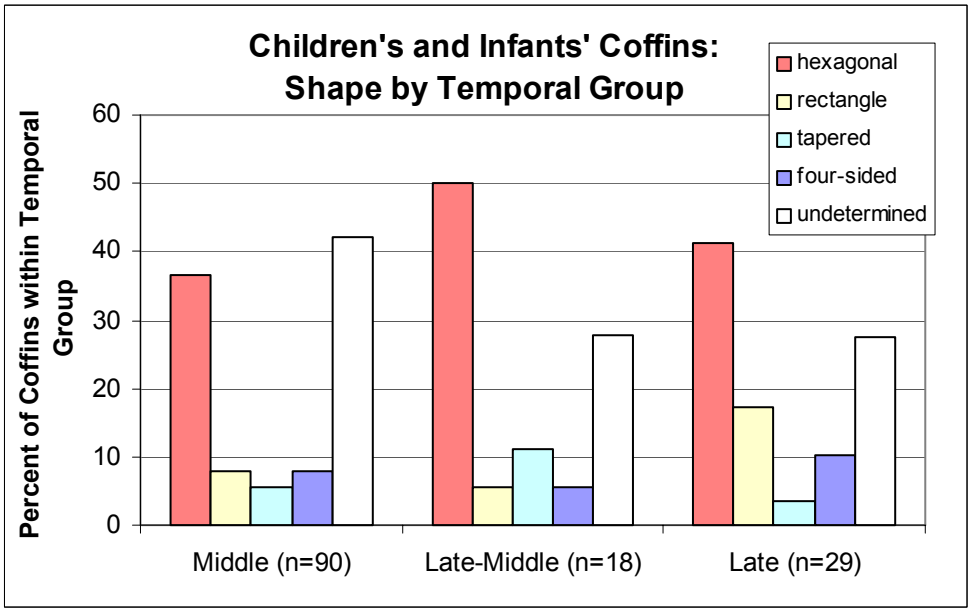

Figure 10.2.
Shapes of children's and infants' coffins by temporal group.

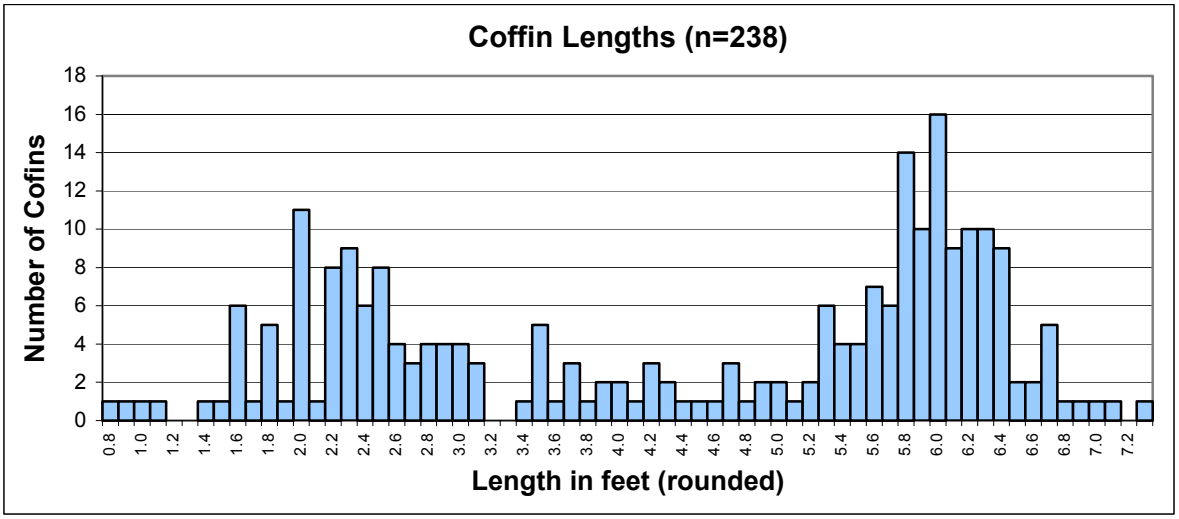

Figure 10.3.
Distribution of coffins by length. Includes only coffins that could be measured for length. Rounded to nearest 0.1 feet.

makers. There was a high degree of variation in coffin size, suggesting that either numerous templates were used and/or that coffins were built to accommodate the measurement of the deceased.

For 88 individuals with measurable coffins, stature could also be calculated (data supplied by Sue Goode-Null of the Skeletal Biology Team). Figures 10.4 and 10.5 show the relationship between stature and coffin size in two ways. The average difference between the calculated stature of the deceased and the coffin length was 0.52 feet, or approximately 6 inches. The average ratio of length to stature was 1.12, with a standard deviation of 0.1. The co-variance of coffin size and stature is clear. Yet, it can be seen that for individuals of approximately equal height, coffin lengths could vary by as much as a foot or more. For example, for 12 individuals whose height was calculated at approximately 5.6 feet, coffins were from .3 feet shorter to 1.3 feet longer than the deceased.

Due to the margin of error in calculating both stature and coffin length, we hesitate to draw conclusions about coffin production. However, we would suggest that the coffin-maker was told at least an approximate height, and built the coffin a few inches longer. For six-sided coffins, the closest template was probably used, while for four-sided shapes the wood may have been measured and cut without a template (see below for a discussion of coffin construction).

Coffin widths as measured in the field ranged from just under half a foot to over 2 feet. It is likely some "splaying" occurred during decay. There were 81 cases where coffins measured greater than 18 inches wide, and 7 where coffin remains measured 2 feet wide or more. The longest and widest coffin measured, from Burial 47 (at 2.3 feet wide by 7.3 feet long), is a case where it is possible the ground had shifted, displacing the sides. One

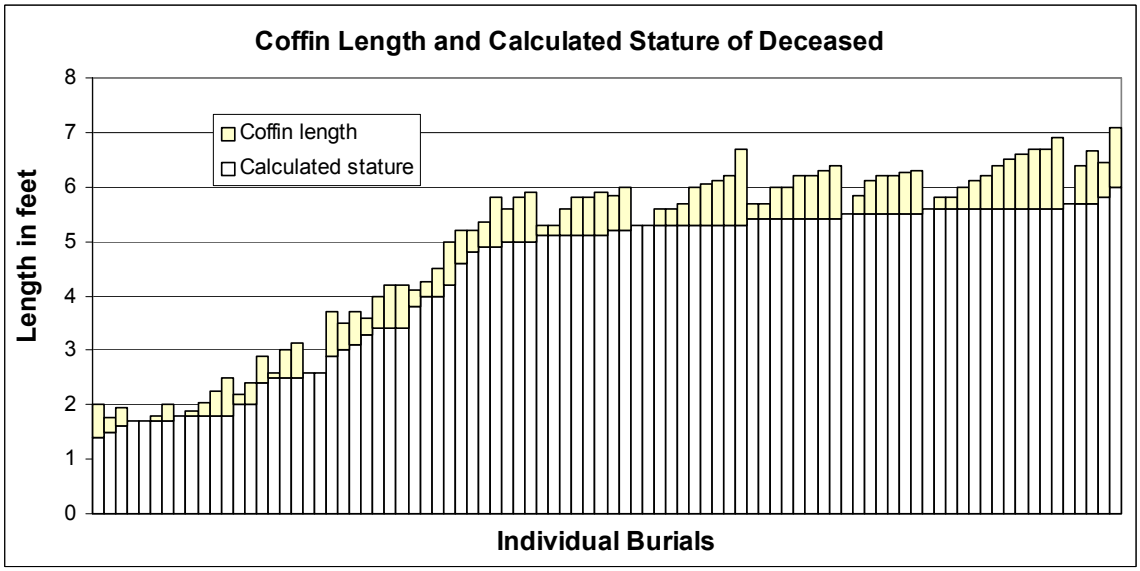

Figure 10.4.
Coffin length compared to stature.

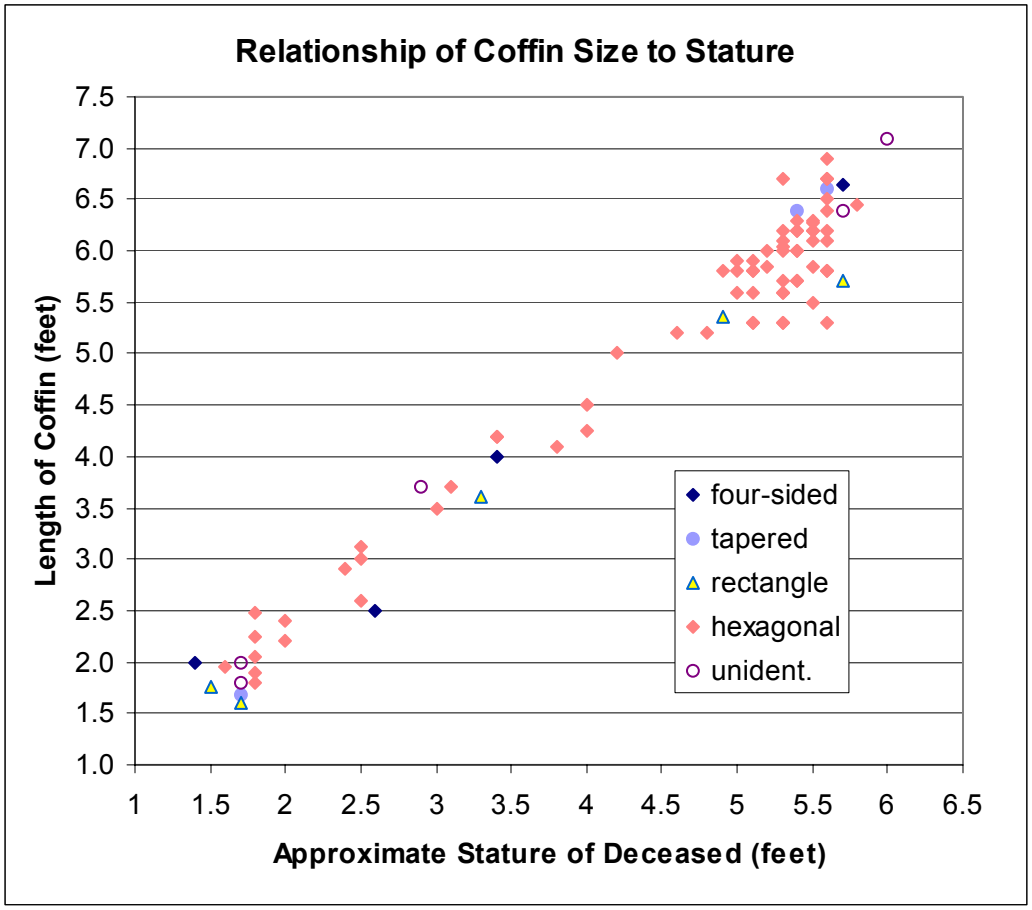

Figure 10.5.
Coffin length in relation to stature, by shape.

other "extra-wide" coffin, that of Burial 376, appears to have been built that way, and it is possible the man interred in it was heavy-set (Figure 10.6).

The ratio of length to width ranged from 1.6 to 6.4, increasing with the coffin length, though for coffins five feet long or longer, the length was typically between 3-5 times the width. The only outliers were the coffins of Burials 387 and 388 (Figure 10.7). These two were slightly tapered and exceptionally narrow, just under a foot wide though six feet long, and they were in adjacent graves. The same maker probably crafted both.

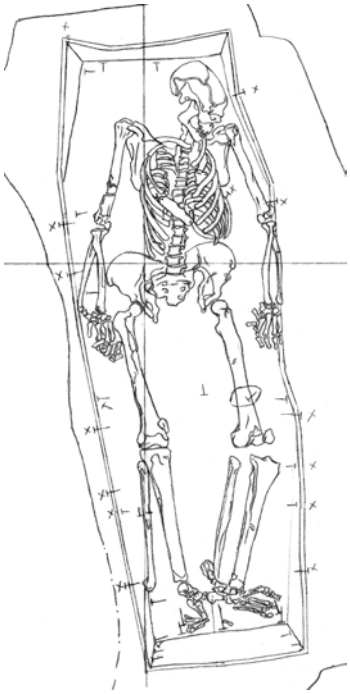

Figure 10.6.
Drawing *in situ* of Burial 376. The coffin was 3 feet wide at its "shoulder." It held the remains of a 45 to 65-year-old man. Drawing by M Schur.

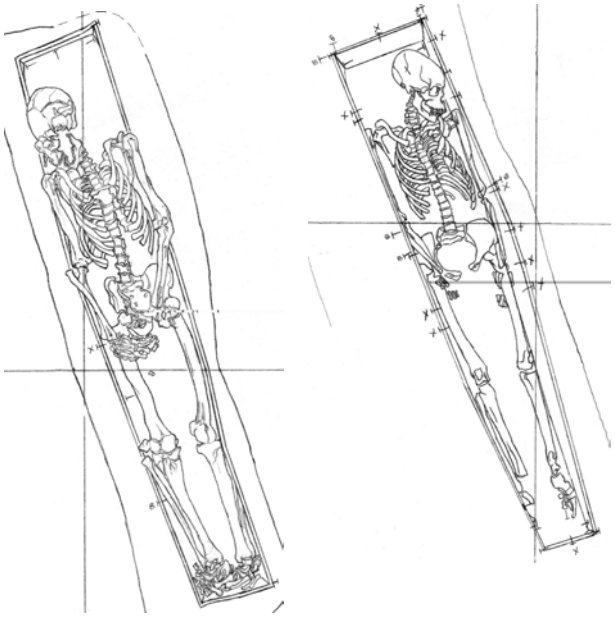

Figure 10.7.
Drawings of Burials 387 (left) and 388 (right), depicting unusually narrow coffins. The two graves were adjacent and precisely aligned. North is to right. Scale: 1 inch = 2 feet. Drawn by M. Schur.

Coffin wood

There were 104 coffins at the African Burial Ground for which at least one wood sample was identified in the laboratory. The number of coffins with each type of wood or combination of woods is listed in Table 10.5, with percentages shown in Figure 10.8, and all identified samples are listed by burial in Table 10.6 (located at end of chapter). Tables and figures follow showing the frequencies of woods by coffin shape and by temporal period.

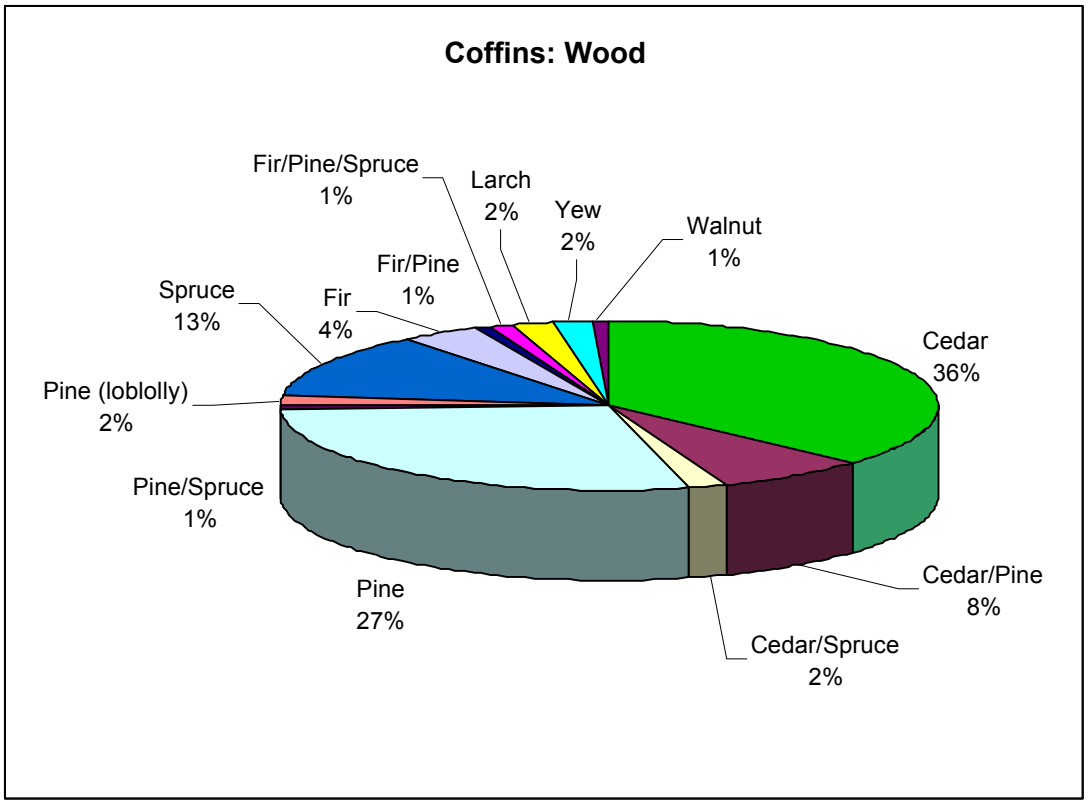

Figure 10.8.
Frequencies of identified coffin woods.

The most frequently identified woods were varieties of cedar. Since this wood is the slowest to rot of the soft woods, more samples of it may have been retrievable archaeologically, and its predominance may be due to sampling error. All coffins with identified samples were built of soft woods but one. Cedar, pine, and spruce were the top three woods in all time periods (Table 10.7). However, while all three were approximately equal in the Early Group, cedar and pine clearly predominated by the Middle Group, and in the Late Group cedar was the clear favorite, barring sampling error. Research on the relative availability of these woods over time would be needed to determine whether wood can be used as a temporal indicator. Coffins made of combinations of different woods made up similar proportions of the sample in each temporal group, suggesting that expediency dictated the selection.

Table 10.5. Categories of coffin wood		
Category	**Sample identifications**	**Number of Coffins**
Cedar	Cedar	31
	Red Cedar	3
	Cedar, Red Cedar	1
	Eastern Red Cedar	1
	Cedar, Eastern Red Cedar	1
	White Cedar	1
Cedar/Pine	Cedar, Eastern White Pine	1
	Cedar, Pine	3
	Cedar, Red Pine	1
	Cedar, Pine, Eastern White Pine	2
	Red Cedar, Eastern White Pine	1
Cedar/Spruce	Cedar, Spruce	2
Pine	Pine	12
	Eastern White Pine	6
	Red Pine	8
	Red Pine?	1
	Pine, Red Pine	1
	Sugar Pine, Pine	1
	Loblolly Pine	1
	Pine, Loblolly (Soft Pine)	1
Pine/Spruce	Pine, Spruce	1
Spruce	Spruce	9
	White Spruce	3
	White Spruce, Red (Eastern) Spruce	1
Fir	Fir	3
	Balsam Fir	1
Fir/Pine	Fir, Eastern White Pine	1
Fir/Pine/ Spruce	Eastern White Pine, Scots Pine, White Spruce, Fir	1
Larch	Larch	2
Yew	Yew	2
Walnut	Black Walnut	1

The one hardwood coffin identified, from Burial 290, was of Black Walnut. There was no other distinguishing feature of the coffin, and there were no artifacts found in association with the deceased other than a single straight pin on the cranium. It is perhaps significant that the deceased was a man between forty-five years and fifty-five years old, one of the older individuals in the sample population. The burial is assigned to the Late-Middle Group.

Table 10.7.
Number of coffins of each wood by temporal group

Wood category	Early	Middle	Late Middle	Late
Cedar	6	15	4	13
Pine	4	14	3	8
Spruce	5	5	1	2
Cedar/Pine	2	2	1	3
Cedar/Spruce	1			1
Pine/Spruce		1		
Pine (loblolly)			1	1
Fir	1	1	1	1
Fir/Pine			1	
Fir/Pine/Spruce				1
Larch			1	1
Yew		2		
Walnut			1	
Total	**19**	**40**	**14**	**31**

Table 10.8.
Number of coffins of each wood by age category

Wood Category	Adult	Sub-adult	Infant	Un-deter-mined
Cedar	24	13	1	
Pine	16	11	1	1
Spruce	11	2		
Cedar/Pine	7	1		
Cedar/Spruce	1	1		
Pine/Spruce		1		
Pine (loblolly)	1	1		
Fir	4			
Fir/Pine	1			
Fir/Pine/Spruce	1			
Larch	2			
Yew		2		
Walnut	1			
Total	**69**	**32**	**2**	**1**

Larch (also called tamarack) was identified in only two coffins, from Burials 97 and 101, both later in our sequence and both of men. One, in Burial 101, was one of the very few decorated coffins at the African Burial Ground (see below).

The woods used for adult and children's coffins were similar (Table 10.8). The only two made of yew (a tough but flexible softwood) were children's coffins, while the other infrequent woods (fir, larch and black walnut) were all in adult coffins.

Table 10.9 shows the distribution of woods by coffin shape. The rank order among the top three woods is essentially the same, but it was mainly the hexagonal coffins that used combinations of woods, and the least frequent woods were all found in hexagonal coffins.

Table 10.9.
Number of coffins of each wood by shape

Wood Category	tapered	four-sided	rectangle	hexagonal	unident.*
Cedar	4	4		22	8
Pine	3		2	16	8
Spruce	4		1	6	2
Cedar/Pine	1		1	4	2
Cedar/Spruce	1			1	
Pine/Spruce				1	
Pine (loblolly)			1	1	
Fir				2	2
Fir/Pine					1
Fir/Pine/Spruce				1	
Larch				2	
Yew				1	1
Walnut				1	
Total	**13**	**4**	**5**	**58**	**24**

*Questionable cases for each shape, i.e., tapered?, hexagonal? etc., are counted as "unident." in this tabulation.

Coffin construction

Historical sources and analysis of surviving examples from opened vaults indicate the following construction method and details for plain, flat-lidded, shouldered coffins (Litten 1991:90-92 and personal communication 1999; Salaman 1997:150):

The coffin bottom and top were marked using a template and sawn.

The sideboards were soaked and while damp were "kerfed" on the inside at the shoulders with six or seven crosscuts sawn almost through the boards.

The head and footboards were nailed to the bottom.

The sideboards were bent around the bottom board and nailed (or sometimes screwed for strength) in place. The bottom, head, and footboards were set inside the sides.

The head of the coffin was 2 (or "a few") inches wider than the foot.

Corners were butt-jointed.

The lid spanned the sides (thus the lid would have been larger than the bottom, which was inset).

The inside was sometimes coated with pitch to seal the joints.

Construction of the tapered and rectangular shapes would have followed the same steps, minus the soaking and kerfing of the sides, and probably would not have required a template. Surviving evidence such as nail locations and orientations from the majority of coffins at the African Burial ground appears consistent with this basic construction method. There were a few coffins, however, that deviated from the standard.

The coffins in adjacent Burials 23 and 68 were virtually identical, and had had the bottom board nailed into the sides rather than vice-versa, so that vertical nails pointed upwards (Figure 10.9). The coffins were four-sided, tapering toward the foot, the walls sloping outward at the top. Around the perimeter, vertical nails attached the lid to the sides, and there were four nails at each corner of the head attaching the sides to the headboard, and three at each corner of the foot attaching the sides to the footboard. These two coffins were probably from the same maker.

Our evidence points strongly to the use of single boards for lids and bottoms, but there were at least two exceptions. Eighteen inches is a width that, according to Noël Hume (1982:38), "would have posed no problem to colonial…sawyers." As noted, however, 81 coffins were measured as wider than 18 inches. The use of narrower and presumably cheaper boards for lids and bottoms might be expected in these cases, but the boards would have to have been cross-braced. There was only one coffin (in Burial 352) in which the bottom had a batten nailed to it crosswise for support, and one coffin (in Burial 392) in which at least two crosspieces were nailed onto the lid (Figures 10.11 and 10.12). The apparent excess width of so many of the other coffins in our sample may be due to splaying, resulting in inaccurate measurement.

One uniquely constructed hexagonal coffin was found. For the coffin bottom of Burial 196, instead of a lengthwise board, numerous short crosswise boards had been used, and these were nailed from the bottom into the coffin sides (Figure 10.10). The lid and bottom were identified as pine, the sides as cedar. Several other coffins (in Burials 237 250 258, and 361) had the bottoms nailed from the bottom up into the sides, and while no cross-wise boards were preserved well enough to be noted in the field, it is possible these too had more than one board forming the coffin floor. Alternatively, this is simply a variant construction method, possibly with the bottom attached after the sides, head, and foot had been joined.

Finally, Burial 194 had the only coffin for which a wooden marker had been nailed to the headboard (Figure 10.13 and Figure 9.6).

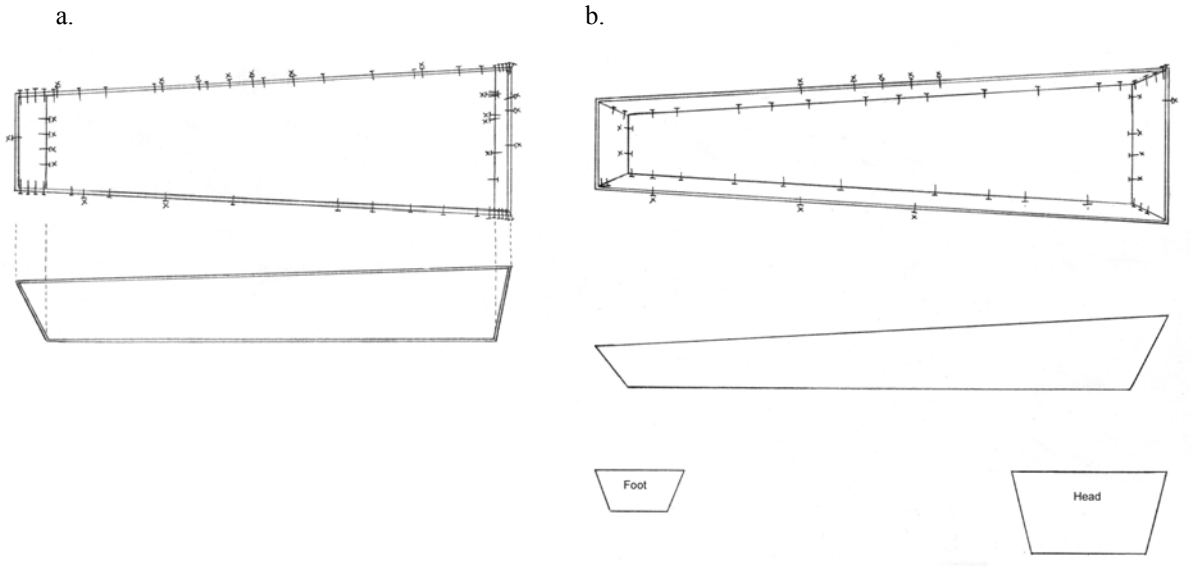

Figure 10.9.
Renderings of coffins in Burials 23 (a.) and 68 (b.). The coffin bottoms were nailed into the head and footboards from the bottom up. (Scale: 1 inch = 2 feet). Drawing by B. Ludwig.

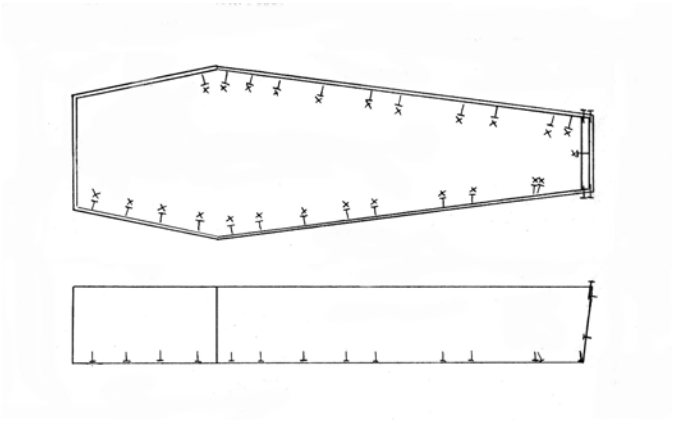

Figure 10.10.
Possible reconstruction of the Burial 196 coffin showing unusual bottom construction. Numerous boards had been nailed cross-wise. Reconstruction by B. Ludwig. (Scale: 1 inch = 2 feet).

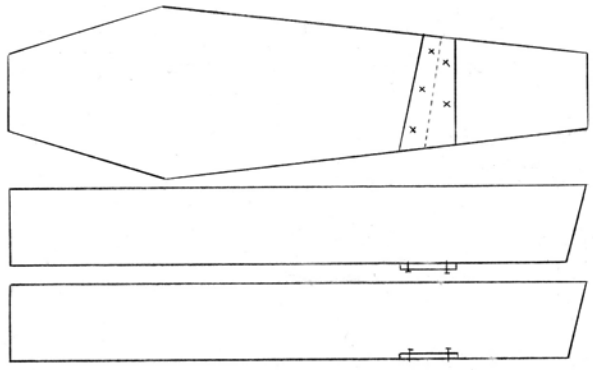

Figure 10.11.
Possible reconstruction of the Burial 352 coffin bottom. The crosspiece may have been made of two butted boards. It was not possible to determine whether the piece was on the outside (center sketch) or the inside (bottom sketch) of the coffin. Reconstruction by B. Ludwig. (Scale: 1 inch = 2 feet).

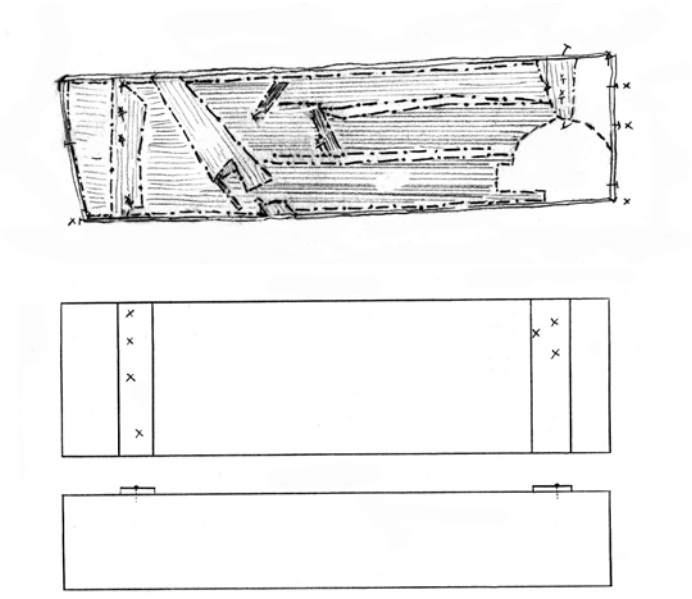

Figure 10.12.
Field sketch (top) and on-site reconstruction (bottom) of the lid of the coffin in Burial 392. Two cross-pieces were nailed to the top of the lid board or boards. Reconstruction by B. Ludwig. (Scale: 1 inch = 2 feet.)

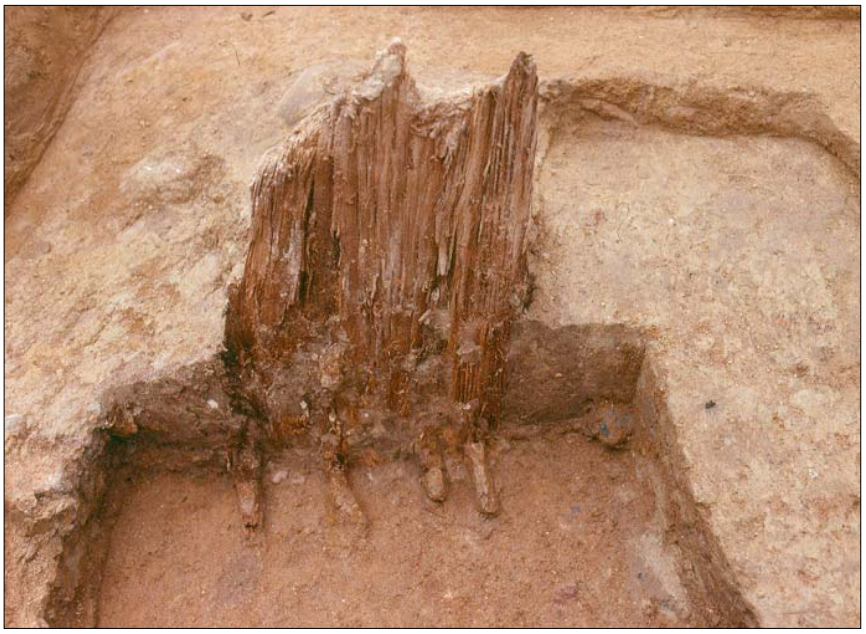

Figure 10.13.
Photograph of the board nailed to the head of the coffin in Burial 194.
The board, a grave marker, was of cedar.
Photograph by Dennis Seckler.

Nail locations

Nail locations based on drawings were recorded for a sub-set of coffins, those that were complete and had what appeared to be the best *in situ* recordation (Table 10.10 located at the rear of this chapter). Many nails were found at the corner joints of the coffins, as expected, since the strength of the box depended on these joints. There were also usually two or three (sometimes four) nails along the bottom of the footboard and headboard, attaching these boards to the bottom, as well as several along the sides.[8] There were far fewer top nails than bottom nails, also to be expected since the lid added some support but mainly just had to be nailed shut.

The presence of horizontally oriented nails at the top of a coffin along its sides would indicate that the lid was inset and was nailed from the sides, while vertically-oriented nails would indicate that the lid was nailed from the top and therefore overlapped the edges of the side, head, and foot boards. The latter pattern reflects typical coffin construction as described above.

Coffins with inset lids are documented[9], but no evidence of any beading or cleats that could have supported inset lids was found for coffins at the African Burial Ground. Therefore, burials where records showed horizontal and top nails were re-examined carefully. In some cases, close examination of *in situ* photographs led to the conclusion that all of the top nails were in fact vertical. In other cases, the horizontal nails in question did not appear at all in the photographs. Top nails were sometimes removed during excavation, and therefore were not present at the time the final burial photographs were taken and drawings rendered. The illustrators had to rely on the excavators' recollections of nail locations. We conclude that the depictions of lid nails on the *in situ* drawings are less reliable than those of bottom nails. The depicted orientations of nails that had been removed probably were not always accurate. It also is possible that some nails were never drawn at all, though the number of nails depicted in some drawings was greater than the number of nails counted in the laboratory (using nail heads to arrive at minimum numbers -- Appendix J lists all burials with minimum nail counts from the laboratory inventory).

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[8] A study of a sample of seven coffins for which nails were recorded *in situ* at a small late-18th to early 19th-cemetery rural family cemetery in Delaware also indicated clearly that the majority of nails were used at the head and foot (LeeDecker 2001:6).

[9] Inset lids are recorded for expensive, lead-lined, triple-shell coffins. Describing the inner coffin of typical surviving triple-shell coffins in vault and intra-mural graves in England, Litten (1991:101) notes that the lids were recessed, supported by a length of beading that was glued and tacked around the upper inner sides. At the College Landing site in Williamsburg, it was concluded from nail placement that the coffin lids were "attached with nails placed horizontally into the six sides" but no discussion is offered regarding the specific construction method or whether the lids would have been inset (Hudgins 1977:64). The burials, all thought to be of African Americans, were dated from 1790 to 1820 based on the machine-cut nail shanks.

Screws

We know that the use of screws in coffins added to the cost (by about a shilling at mid-century), so an attempt was made to examine the distribution of these hardware items. Unfortunately, the severe corrosion of all coffin hardware made the identification of screws difficult, especially in the field during excavation – there were only three burials in which screws were recorded on the field drawings (Figure 10.14). In the laboratory, some screws were identified through visual inspection after minimal mechanical cleaning, but numerous items that could not be clearly identified as either nails or screws were set aside for X-rays and were lost when the laboratory was destroyed. Screws were recovered and identified from 31 coffins, and there were possible screws from one other. Their distribution is presented in Table 10.11. Coffins of young children and men and women of all ages are represented. Almost all of the coffins where screws were used were hexagonal, doubtless because extra strength was needed at the joints due to the bent sideboards. The only Early Group coffins with screws were from Burials 72 and 83, but this shared grave had been disturbed by a foundation and the screws, which lacked specific provenience, might have been intrusive, or the burials might be incorrectly assigned to the Early Group. The lack of screws in early burials is probably attributable to the lack of hexagonal coffins. As noted above, tapered coffins of the Early Group generally had more nails at the joints, and a change in joinery accompanying the change in style is be suggested.

In most cases only a single screw was identified, and numerous nails were also present in every case. Although we are likely to have missed screws due to poor preservation and the loss of information from items that were never X-rayed, African Burial Ground coffins were clearly built mainly with nails. Screws were apparently usually employed on an as-needed basis during coffin construction rather than being used, per order, instead of nails. The few screws that were recorded *in situ* were at the corner joints (Burials 225 and 321), or at the top and oriented vertically to attach the lid (Burials 286 and 321)

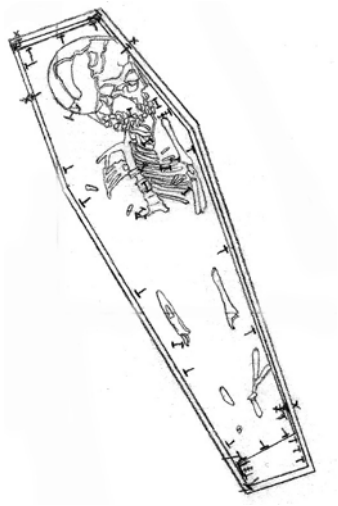


Figure 10.14.
Example of a coffin with screws recorded *in situ*.
The drawing is of Burial 321, which held the remains of a child one to two years old. One screw attached the right side to the foot board and two others attached the left side board to the bottom. North is to right, and the scale is 1 inch = 1 foot.
Drawing by W. Williams.

Table 10.11.
Burials with coffin screws

Burial	Age low	Age high	Sex	Temporal Group	Coffin	Number of screws*
B017	4	6	undete	mid	hexagonal	1
B022	2.5	4.5	undete	mid	unident.	1
B040	50	60	female	late	hexagonal	1
B072	1	2	undete	early?	rectangle	2 plus 4 shanks
B077	0.67	1.3	undete	mid	hexagonal	1
B083			undete	early?	rectangle	1
B086	6	8	undete	late	hexagonal	1
B089	50	60	female	lmid	hexagonal	3
B095	7	12	undete	late	hexagonal	1
B097	40	50	male	late	hexagonal	1
B100			undete	mid	hexagonal	3
B101	26	35	male	lmid	hexagonal, decorated	4
B122	18	20	female	mid	hexagonal	1
B135	30	40	male	late	hexagonal	1
B154	25	29	female	mid	hexagonal	1
B159**	25	35	female	mid	hexagonal, painted	2
B173	0.25	0.75	undete	late	rectangle	2
B186	0	0.17	undete	late	hexagonal	1
B187	1.5	4	undete	late	hexagonal	1
B225	0.5	1.25	undete	late	four-sided	2
B241	55	65	female	late	hexagonal	1
B268	0	0.5	undete	mid	hexagonal?	1
B284	21	28	male	mid	unident.	1
B285	20	30	female	mid	hexagonal	1
B286	4.4	8.5	undete	mid	hexagonal?	2
B300			undete	mid	hexagonal?	1
B315	30	40	female	mid	hexagonal?	1
B321	1	2	undete	mid	hexagonal	1
B341			male	mid	hexagonal	1
B346	50	70	female	late	hexagonal	1
B353	24	34	male	mid	hexagonal	1
B427	16	20	male?	mid	hexagonal	1

*Counts are minimums: fragments were counted if a head was present, or if a shank-with-point was present with no potentially corresponding head. 13 whole screws were recovered.
**Burial 159 had 2 possible screws (no x-ray was taken prior to the items' destruction on September 11, 2001)

The joints may have occasionally required screws for strength, for instance if warped boards were used. Another possible use for screws would have been to secure the lid temporarily, perhaps if the coffin was to be stored or for transporting it to the house of the deceased, where it could then be removed to place the body inside.

It is worth noting that the coffin in Burial 101, which had a decorated lid and would have been relatively expensive, had at least four screws (though their precise locations on the coffin are unknown), which may have further increased the cost; and that Burial 159 held a coffin that was painted and also had possible screws. Thus, the fancier the coffin the greater the likelihood the builder would use screws, perhaps reflecting a keener sense of overall quality of workmanship.

Coffin decoration

Coffin furniture refers to handles, corner and edge "lace," breastplates, upholstery, and other decorative metalwork as opposed to hardware (nails and screws) used in constructing the box. Five coffins with decorative metalwork were found at the African Burial Ground. Two of these were problematic due to recordation problems or disturbance. One hexagonal coffin, in Burial 252 (from the late period and located north of the fence line), may have had a small breastplate on the lid; this item was recorded in the field but never accessioned in the laboratory. A small iron disc was recorded along with the possible breastplate, and was inventoried in the laboratory but not salvaged after the collapse of the World Trade Center. One possible tack and several nails were also recorded roughly aligned lengthwise down the center of the coffin lid; it is possible these attached the breastplate to the wood. The grave contained the remains of a very young child between one and two years old. In Burial 222, assigned to the Late-Middle Group and holding an adult (probably a man) of undetermined age, excavators noted small iron tacks that they thought represented a lid decoration on the hexagonal coffin. The tacks were observed in place on the pelvis and right arm of the individual during excavation, but vandals disturbed the human remains, apparently scattering the tacks, and only four were recovered. They were identified as of cast iron, manufactured using a technique first patented in England in 1769 (see Lenik 1977).

Only three coffins with clearly decorated lids were recorded in detail, in Burials 101, 176, and 332. All three were in men's graves assigned to the Late-Middle Group and are discussed in Chapter 8. Iron tacks formed the decorations, and as in Burial 222, the tacks appeared to be cast metal. In one case, Burial 176, the coffin also had handles. Each coffin is described more fully below.

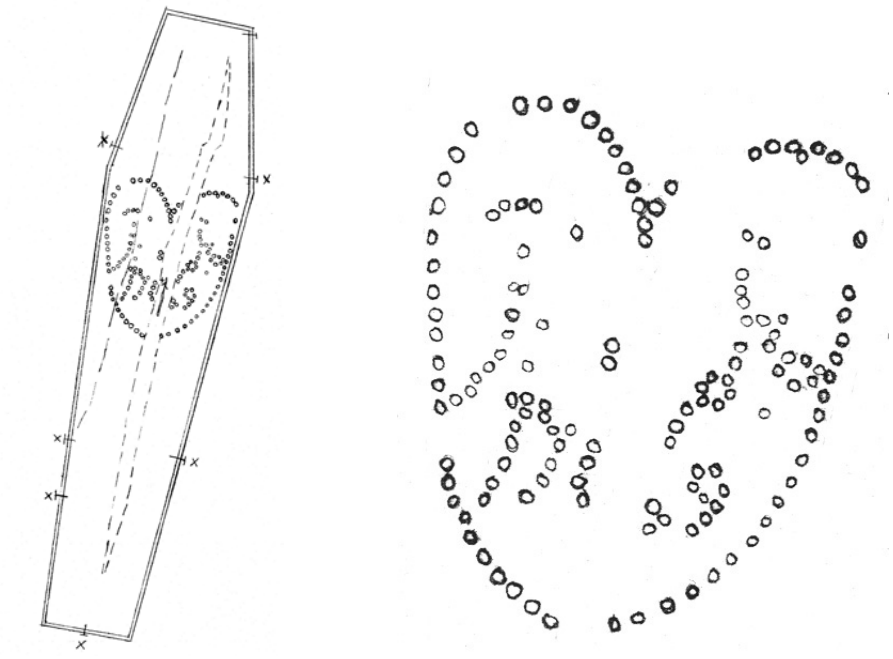
Tacks were also recovered in association with Burials 138, 197, and 256 but do not seem to have represented decorations. A handle back-plate was recovered from Burial 90, though it is considered unlikely the coffin in this grave had handles (only one was found, and the edge of the burial had been disturbed, raising the possibility that the item was intrusive).

It is interesting that the African Burial Ground coffin-lid decorations were composed of iron tacks, rather than the brass tacks favored by Euro-Americans. In addition to iron being less expensive than brass, it may have been preferred for cultural reasons. Tinning would have "whitened" the tacks and made them reflective, so the possible significance of color or other visual quality should be considered (see Thompson 1983; Thompson and Cornet 1981).

Burial 101: the heart or Sankofa symbol

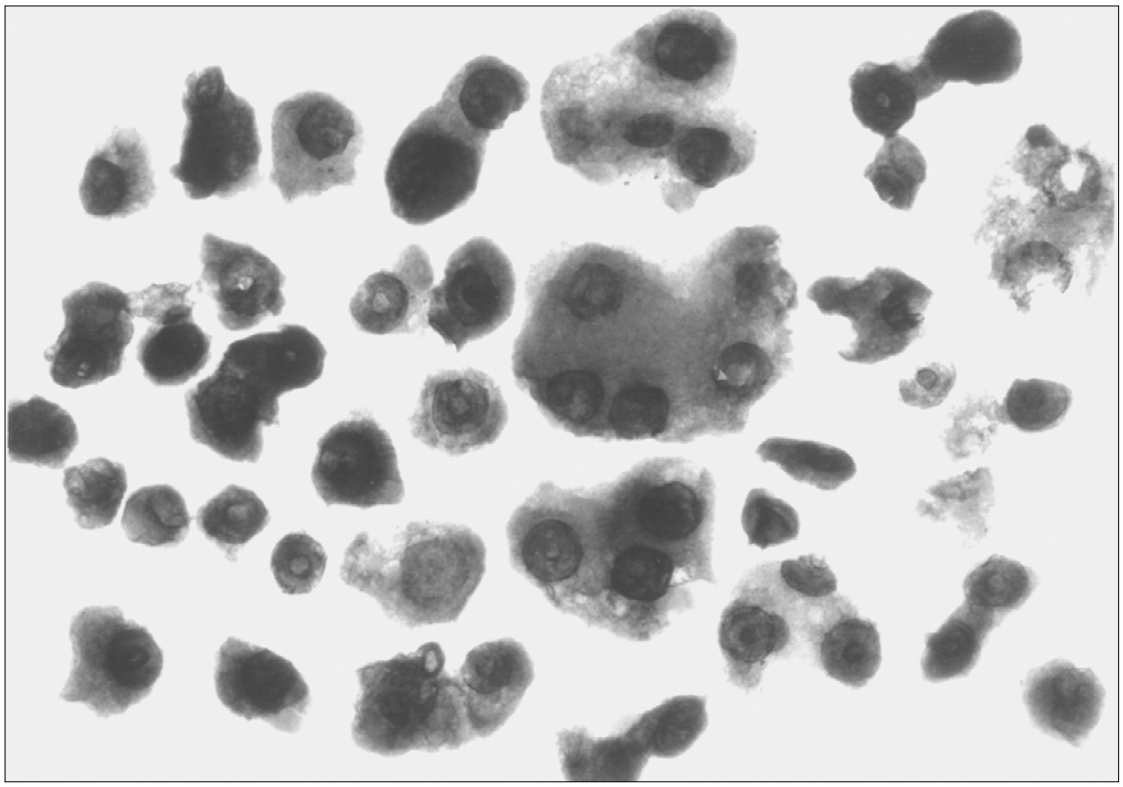
Burial 101 (see Chapter 8) was of a man in his early thirties, whose dental modifications and dental lead levels suggested possible African nativity, but whose strontium isotope levels pointed to possible birth in America (Goodman et al. 2004 [Chapter 6 of the Skeletal Biology Report); see Handler 1994 on modified teeth). The coffin lid decoration or symbol measured approximately 45 cm wide and 48 cm long, and was positioned over the mid-section of the body (Figure 10.15).

The heart-shaped outline consisted of 51 domed, square-shanked iron tacks, with heads measuring 10 mm in diameter. The inner decorative elements were composed of smaller tacks, with heads approximately 6 mm in diameter. The tacks were described as "tinned or silvered, iron-headed tacks" when first exposed. All of the tacks appeared to be of one-part construction, and were of cast manufacture.



a. b.

Figure 10.15.
a. *In situ* drawing of the lid of the coffin in Burial 101 (shown at a scale of 1 inch to 2 feet) – the lid had split longitudinally as shown.
b. Detail of the motif formed from tacks on the lid. Drawings by M. Schur. See Chapter 8 for *in situ* photograph.



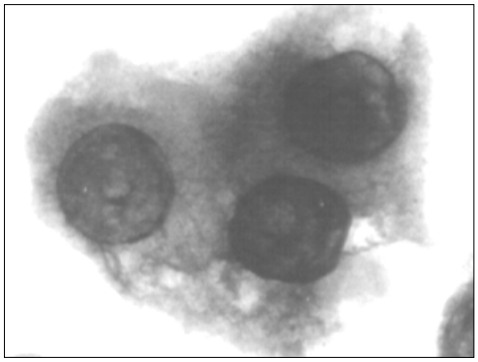


Figure 10.16.
X-ray of small tacks from the Burial 101 coffin lid decoration. Detail of three tacks that had rusted together at right. The circles at the centers of the tack heads are where the tack shanks had broken off. Diameter 6 mm. Exposure 30 sec./70K. Supplied by the W. Montague Cobb Anthropology Laboratory, Howard University.

As illustrated in Chapter 8, the interior portion of the decoration may have originally formed initials and an age or year. If so, the initials are indecipherable, but the year "1769" is a plausible reading for a date (keeping in mind that the lid had split longitudinally, possibly bifurcating a "6"). Alternatively, the interior design may have formed part of a non-alphanumeric device.

Coffins with heart motifs on the lids are not uncommon in colonial period and 19th-century contexts. They typically had initials or a name, and an age and/or year formed in tacks on the interior. As noted, Joshua Delaplaine made one such coffin for Samuel Hallet of New York in 1756. Samuel Hallet's estate paid over £2 for his heart-decorated coffin, but since it was made of an expensive wood (liquidambar) we do not know how much the Burial 101 coffin, which was of larch, may have cost. Nor can we know who ordered the man's coffin--his family and friends or the head of the deceased's household;

or whether an African craftsman built it; or whether the deceased's mourners decorated it themselves. The heart shape may have had meanings for the mourners that were other than or in addition to those Europeans would have attributed to it. The heart has been interpreted as representing of the soul, for example, in West Central Africa (Denbow 1999), and the shape of a heart with interior scrolls has been identified as an Adinkra symbol -- "Sankofa" -- associated with Twi-speaking Akan people of Ghana and the Ivory Coast, as noted in Chapter 8.

Burial 176: handled coffin with tack-edged lid

Burial 176 held possibly the most expensive coffin of those excavated at the African Burial Ground. It was fitted with six iron handles (the only definitely handled coffin at the site) and in addition had iron tacks around the perimeter of the lid. The handles, of the inverted bale type with "ears" on each end of the back plates, were probably a matched set, though they were not all well enough preserved to confirm this. One that was X-rayed was decorated with facing **< >** cutouts between the posts (Figures 10.17-10.20). The handles were placed two on each side, one each at the head and foot.

We considered the possibility that the coffin was cloth-covered, a common embellishment by the 18th century, but no textile fragments adhered to the perimeter tacks, and it is likely they were simply decorative.

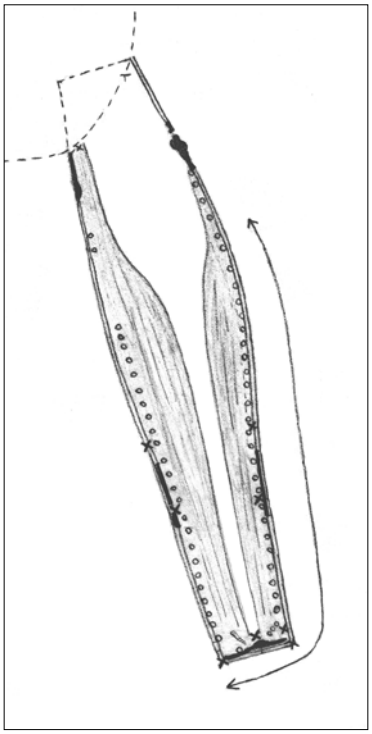
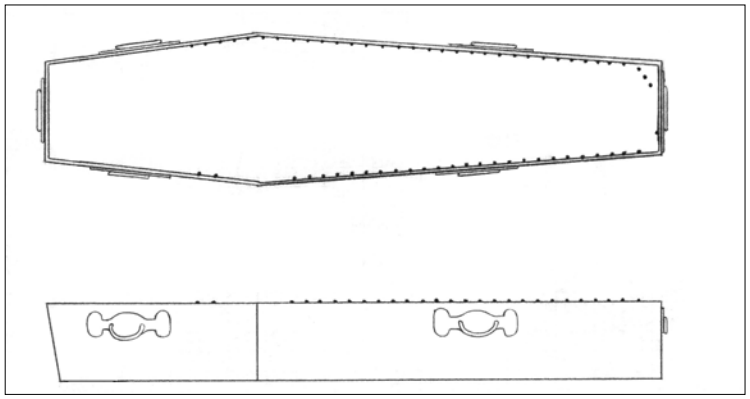


Figure 10.17. (left)
Drawing of the coffin lid in Burial 176 during excavation. Drawing by B. Ludwig.

Figure 10.18. (below)
Reconstruction of coffin, top and side view, by B. Ludwig, based on field observation.



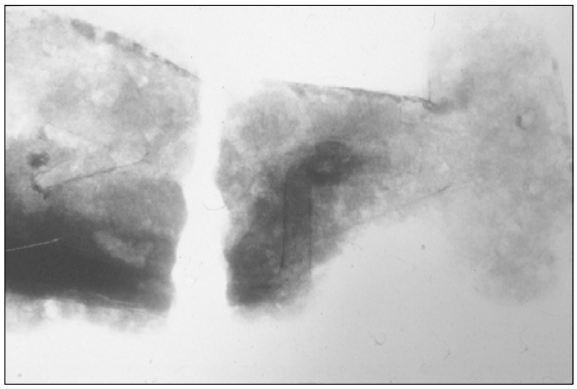


Figure 10.19. (left)
X-ray of coffin handle from Burial 176. The "ear" of the back plate with two screw holes is visible at right, and the bale handle can be seen to the left of this. One of the cutouts is visible on the piece at the left. Supplied by John Milner Associates.

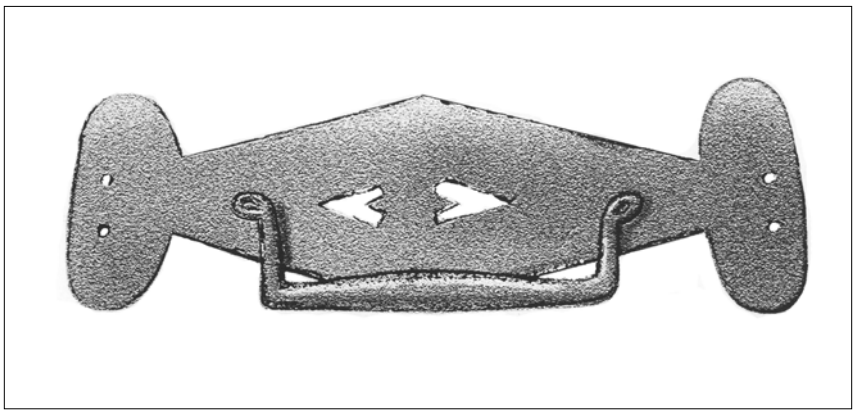
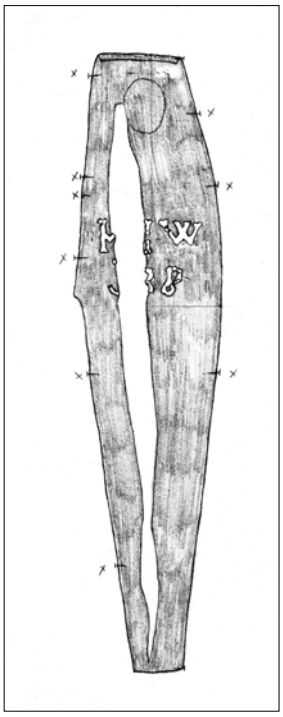


Figure 10.20.
Composite drawing of coffin handle based on the x-rays taken of the handles from Burials 176 and 90. Drawing by C. LaRoche and R. Schultz. Length is 7.4 inches.

The reverse-bale type coffin handles were of hand-wrought iron. Conservators noted that the back plates had strike marks from the hand forging along the outer edges (visible in the X-ray), and score marks at the cutouts. The handles connected to the back plates with posts, and the plates were screwed into the coffin boards. A similar handle, with the "ears" and facing cutout design, was recovered from a disturbed burial context at the St. Anne's Churchyard in Annapolis (Jones 2001:8).

Burial 332: "HW"

Unique at the African Burial Ground, Burial 332 held a coffin with a lid decorated in iron nails forming initials and a number (Figure 10.21). The grave was of a man whose presumed initials were "HW," and who probably died at age "38" (see Chapter 8). The coffin was hexagonal in shape, and a sample of the wood was identified as Eastern Red Cedar. Its lid had split lengthwise, leaving a gap down the center and disturbing the lettering. The only artifacts in the coffin were a pin beneath the man's skull and a curved pin or copper ring fragment in the chest area. Burial 289, of a young child, overlay the southwest part of Burial 332. The grave shaft outline indicates the latter was a separate interment, though it may have been deliberately placed above Burial 332.



Coffins with initials and age at death, like those with hearts, were not uncommon during the 18th and 19th centuries, and Delaplaine's records tell us that one for a child was made in New York in 1756 for 14 shillings.

The display of the deceased's identity on the lid suggests that the funeral ritual may have involved showing the coffin, either at the home, during the procession to the cemetery, or at the graveside.

Figure 10.21.
Drawing of the Burial 332 coffin lid as found during the excavation. The oval indicates where the skull was visible through the remnants of the coffin wood. See Chapter 8 for a photograph. Drawing by M. Schur.

Possible painted coffins

Coffins in Burials 159, 183, 213, and 313 were thought by excavators to have possible paint residue.[10] Burial 159 was of a woman between twenty-five and thirty-five years old, assigned to the Middle Group. Her coffin was hexagonal in shape. The western portion of the lid was well preserved but had split down the middle lengthwise. When exposed, it appeared to have red paint adhering to the wood, which was photographed and sampled. Laboratory analysis (see section 10.D) suggested that the Burial 159 coffin may in fact have been painted, based on the presence of copper at the surfaces of the wood. It was not possible to determine the color of the original surface treatment. Documentary sources from both New York and Charleston suggest that the color typically used for coffins was black (see section 10.B).

The other coffins with possible paint also had observable reddish coloration adhering to wood. None were analyzed for pigment.[11] Burial 183, north of the fence line and assigned to the Late Group, held a child approximately a year old in a hexagonal coffin, who had been buried with the head to the east rather than the west. Samples of wood

[10] The conservation report (LaRoche 2002:44) states that Burial 63 was also thought by excavators to have possible paint, but there is no mention of this in the field notes.

[11] According to the project conservators (LaRoche 2002:44), the possible paint from Burial 183 was not brought to their attention for analysis, and it is assumed this was the case for Burials 213 and 313 as well. Howard University laboratory staff likewise did not note any wood samples that had been labeled as possibly painted or that appeared to be painted. The sample identified as Red Cedar from Burial 213 was labeled as "Bag 1 of 2" but no second sample was ever located. The lid sample from Burial 313 was stored in the freezer and was not recovered after the collapse of the World Trade Center.

were taken and the south side board was identified as cedar, the north as spruce. The coffin lid was recorded as having flecks of possible paint over the entire surface, and a concentration of orange/red color on the north side. A wood sample was taken from the hexagonal coffin in Burial 213, the grave of a woman 45 to 55 years old, and was identified as red cedar. Excavators noted that a wood sample with possible red paint was also taken, but no such sample was inventoried or analyzed by laboratory staff. Burial 313 held a man of 45 to 55, buried in a hexagonal coffin. His grave was north of the fence line and is assigned to the Late Period. A sample of the coffin lid included what excavators thought was a possible paint stain, collected from the pelvic/femoral area; this sample was not identified or analyzed for pigment. A sample of wood was also taken from the coffin bottom and was identified as eastern white pine.

The decorated coffins represent an added funeral expense. If any of them were provided by slaveholders, they might be interpreted as instances of paternalism: valued household members (including free or enslaved servants and laborers) could be afforded special treatment in death, above and beyond the customary practice. But they might also speak to the ability of kin to pressure slaveholders into extra outlay. If, on the other hand, special coffins or accoutrements were donated or paid for by friends and kin of the deceased, they may reflect the special esteem in which the deceased was held or the status or aspirations of the mourners. In the case of Burial 101, the symbolic content of the decoration may have been primary, while for Burial 332 the identity of the deceased was emphasized. The Burial 176 coffin's decorated handles suggest fashion and expenditure and perhaps also special attention to the act of carrying the deceased to the grave. Their cutout decorations may have been simply a commonly available style for handles, or may have been somehow symbolic.

10.D. The coffin wood and hardware assemblage: condition, treatment, chain of custody

Wood

Coffin wood samples as well as samples of wood thought to be from grave markers were frozen upon recovery to preserve them for analysis. In addition, there were many bags of soil from the scraping of coffin stains, labeled as coffin wood, which often contained only slivers of wood or none (all wood samples are listed in Appendix E). Wood samples of all kinds were assigned consecutive catalog number suffixes ("CWA", "CWB", etc.; see Chapter 1). Often the bags indicated which part of the coffin (lid, bottom, sides) the sample came from, but many samples were not so labeled. Unless two bags were labeled identically, it was assumed that some distinction in provenience was represented by separate bags even when such a label was absent; therefore, separate bags from a burial were always retained. Analysis involved thawing of samples, preparation, and examination under a polarized-light microscope. The conservation report describes sample preparation as follows:

> The largest and most robust pieces within each thawing episode were sampled first. For these samples, conventional sampling strategies were employed, including boiling the wood to facilitate taking samples or taking the required cuts directly from viable wood (Hoadley 1990). This was the method most frequently employed. The more fragile samples and some minute samples were infused with Primol WS-24 to facilitate sample taking and identification.
>
> Due to the large number of samples collected, microscopic slides were not retained but photomicrographs of samples with clear distinguishing features were digitized for documentation using a digital imaging system [LaRoche 2002:43].

A total of 203 frozen wood samples from 133 burials was analyzed by JMA conservators, using comparative techniques. Often identifying morphological features were no longer extant or were degraded, and the wood could be identified only to the family or genus level rather than to species. Odor and the presence of residue were useful in some identifications (further description of the identification process will be found in LaRoche 2002:42). All of the identified wood samples are listed in Table 10.6.

No additional samples were analyzed by Howard University Archaeology Team staff. All wood samples stored in the freezer at the World Trade Center lab were lost on September 11, 2001. Most of the wood samples stored in boxes on the laboratory shelving (many of which consisted of scrapings from wood-stained soils) were salvaged; however, these samples were not considered likely to yield definitive identifications.

As noted (section 10.C), coffins in Burials 63 and 159 were identified as possibly having remnants of paint on the wood. Wood samples from these burials were examined microscopically, but no evidence of organic binders was identified and the samples were subsequently subjected to x-ray fluorescence to attempt to detect pigment. Procedures and results of the x-ray fluorescence analysis are provided in the conservation report (LaRoche 2002:44-48). The analysis was done at the U.S. Customs Laboratory using a Jordon Valley Applied Research x-ray fluorescent spectrometer Model EX 300. Wood samples with iron and copper staining from other burials, as well as control samples with no evidence of metallic staining, were used for comparative analysis. In addition, soil samples were tested in order to determine the extent to which wood surface discoloration might be a result of elements in the soil. Results indicate that the wood from the coffin in Burial 159 probably had some kind of surface alteration, based on the levels of copper present (higher than in soil samples, but lower than residue from copper artifacts). It should be noted, however, that a copper-alloy straight pin was recovered adhering to the wood where the pigment appeared to be best preserved. It seems possible the copper levels present in the wood sample may be distorted due to the proximity of corroded pins.

Iron hardware and coffin furniture

Coffin hardware was not among the material to receive treatment by project conservators. The bags labeled as “coffin nails” were examined by Howard University Archaeology Team laboratory staff in 1999. Every fragment was examined and enumerated as either

whole, head fragment, head and shank fragment, shank fragment, or shank with point. This enables a minimum nail count for every context, which then can be checked against the field drawing of *in situ* nails where available.

Nails were all of iron and hand-wrought. They typically were not measurable (whole nails that could be measured are listed in the inventory). Most nails were broken at the head and along the shaft, either while *in situ* or during recovery. Very small nails were often listed in the inventory as "tacks," but these are not to be confused with the dome-headed and tinned iron tacks used for lid decorations.

Identification of screws was considered important because screws were more expensive than nails, and their presence may indicate a higher overall cost for the coffin (see discussion of coffin construction). Some screws were identifiable upon visual inspection. In other cases, where corrosion was too far advanced for identification, possible screws were set aside for X-rays. X-rays of unidentifiable items were only taken up to Burial 138. The remaining items that had been set aside remained on separate shelving when the laboratory was shut down in early 2000. These items were not salvaged after the World Trade Center collapse on September 11, 2001.

Coffin handles and tacks consisted of corrosion products (rust) forming relatively amorphous masses. They were desalinated in deionized water baths but received no further conservation treatment. Some of the handles and tacks were x-rayed by project conservators working for John Milner Associates, and some additional tacks were X-rayed by Howard University staff. Many lumps of rust that were possible tacks, or that appeared to be tacks but could not be quantified, were set aside for X-rays along with the possible screws, and were lost in the World Trade Center collapse.

Handles with back plates numbered seven, but were broken into pieces in the course of removal from the soil. Though not all of them were well enough preserved for accurate description, based on the surviving pieces and x-rays it appears likely that all were of the same basic type and shape. Because the bags of nails from Burial 176 were not recovered from the World Trade Center, it is not known whether any screws were recovered.

Disposition

All coffin remains that survived the destruction of the World Trade Center lab were transferred to the General Services Administration for reburial. Where there were corresponding human skeletal remains, the coffin wood and hardware were placed in the new coffin along with the remains and any other artifacts. No samples of coffin wood or hardware were retained.

Table 10.6.
Burials with identified coffin wood

Burial	Age low	Age high	Sex	Temporal Group	Coffin shape	Catalog#	Sample Location	Wood
B006	25	30	male?	late	hexagonal	00219-CWA	lid/side	Eastern White Pine
B011	30	40	male?	lmid	hexagonal	00267-CWA through CWD	bottom	Cedar
B012	35	45	female	late	rectangle?	00253-CWA	lid	Cedar
B015	11	18	undete	late	unident.	00286-CWA	unspecified	Red Pine
B017	4	6	undete	mid	hexagonal	00357-CWA	lid	Yew
B018	35	45	female?	early	tapered	00310-CWA	lid	Red Cedar
B022	2.5	4.5	undete	mid	unident.	00344-CWA	bottom	Pine
						00344-CWB	unspecified	Pine
B023	25	35	male	early	tapered	00383-CWA and CWB	unspecified	White Spruce
						00383-CWC	unspecified	Red (Eastern) Spruce
B025	20	24	female	mid	unident.	00353-CWA	unspecified	Pine
B027	1.4	2.8	undete	mid	hexagonal	00378-CWA	unspecified	Pine
B029	35	45	male?	early	tapered	00381-CWA1	side	White Spruce
						00381-CWA2	unspecified	White Spruce
B034			undete	early	rectangle?	00427-CWA	bottom?	Fir
B035	8	10	undete	mid	hexagonal	00458-CWA	unspecified	Red Pine
B036			female	late	unident.	00459-CWA	unspecified	Cedar
B037	45	55	male	late	hexagonal	00460-CWA	lid/side	Cedar
B038	12	18	female	early	tapered	00461-CWA	unspecified	Spruce
B040	50	60	female	late	hexagonal	00489-CWA	unspecified	Eastern White Pine
B041			undete	mid	unident.	00525-CWA	lid	Sugar Pine
						00525-CWB	lid	Pine
						00525-CWC	bottom	Pine
B046			female?	mid	unident.	00605-CWA	unspecified	Fir
B047	35	45	male	mid	hexagonal?	00619-CWA	unspecified	Spruce
B049	40	50	female	mid	hexagonal	00641-CWA	unspecified	Cedar
B050			undete	mid	hexagonal	00649-CWA	interior	Spruce
						00649-CWB	lid, bottom	Pine
						00649-CWC	unspecified	Pine
B054			undete	lmid	unident.	00726-CWA	unspecified	Cedar
B057	0.88	2.16	undete	mid	hexagonal	00796-CWA	unspecified	Cedar
B058	3.5	4.5	undete	late	rectangle	00797-CWA1	bottom	Red Pine
B063	35	45	male	late	hexagonal	00805-CWA	bottom	Cedar
						00805-CWB	side	Pine
B064	0.38	0.88	undete	lmid	hexagonal	00803-CWA	unspecified	Pine
B067	40	50	male	lmid	unident.	00810-CWA	unspecified	Eastern White Pine
						00810-CWB	unspecified	Fir
B068	21	25	male	early	tapered	00807-CWA	unspecified	Cedar
B069	30	60	male	mid	hexagonal?	00808-CWA	unspecified	Spruce
B070	35	45	male	mid	hexagonal	00812-CWA	unspecified	Cedar

Table 10.6.
Burials with identified coffin wood

Burial	Age low	Age high	Sex	Temporal Group	Coffin shape	Catalog#	Sample Location	Wood
B071	25	35	female	late	hexagonal	00813-CWA	unspecified	Cedar
B077	0.67	1.3	undete	mid	hexagonal	00820-CWA	unspecified	Pine
B082	18	25	female	mid	unident.	00825-CWA	unspecified	Red pine
B083			undete	early?	rectangle	00826-CWA	unspecified	White Spruce
B085	0.25	0.75	undete	mid	hexagonal	00831-CWA	unspecified	Cedar
B089	50	60	female	lmid	hexagonal	00830-CWA	unspecified	Spruce
B091	0.67	1.3	undete	lmid	hexagonal	00834-CWA	unspecified	Eastern Red Cedar
B094			undete	mid	hexagonal	00837-CWA	unspecified	Cedar
B096	16	18	male	mid	hexagonal	00839-CWA2	unspecified	Eastern White Pine
B097	40	50	male	late	hexagonal	00840-CWA	unspecified	Larch
B101	26	35	male	lmid	hexagonal	00843-CWA1	unspecified	Larch
B107	35	40	female	lmid	hexagonal	00850-CWA	unspecified	Fir
B108	0.25	0.75	undete	lmid	hexagonal	00851-CWA	unspecified	Pine
B109	0.67	1.33	undete	lmid	hexagonal	00852-CWA	unspecified	Pine
B122	18	20	female	mid	hexagonal	00867-CWA	unspecified	Eastern White Pine
B126	3.5	5.5	undete	mid	hexagonal	00871-CWA	lid	Spruce
B128	0	0.17	undete	mid	hexagonal	00873-CWA	unspecified	Cedar
B130	1	2	undete	mid	hexagonal	00875-CWA	unspecified	Eastern Red Cedar
						00875-CWB	unspecified	Cedar
B137	25	35	undete	late	unident.	00882-CWA	unspecified	Pine
B147	55	65	male	late	hexagonal	00892-CWA	all	White Cedar
B153			female?	late	hexagonal	00898-CWA	unspecified	Cedar
B159	25	35	female	mid	hexagonal	00905-CWA1	unspecified	Cedar
						00905-CWA2	unspecified	Red Pine
B171	44	60	male	late	hexagonal	00931-CWA	lid	Pine
						00931-CWB	side	Spruce
B174	17	18	male	late	hexagonal	00940-CWA	unspecified	Cedar
B177	30	60	undete	early	tapered	00946-CWA	lid	Eastern White Pine
B182	7.5	12.5	undete	early	tapered	00970-CWA	unspecified	Cedar
B183	0.63	1.13	undete	late	hexagonal	00971-CWA	unspecified	Cedar
						00971-CWB	side	Spruce
						00971-CWC	side	Cedar
B186	0	0.17	undete	late	hexagonal	00987-CWA	lid	Spruce peg
B189			undete	mid	unident.	01015-CWA	unspecified	Cedar
B194	30	40	male	late	hexagonal	01109-CWA	unspecified	Cedar
						01109-CWD	post	Cedar
B195	30	40	female	late	hexagonal	01151-CWA	unspecified	Red Cedar
B196	20	24	undete	late	hexagonal	01150-CWA and CWE	side	Cedar
						01150-CWB	lid	Pine
						01150-CWC	lid	Eastern White Pine
						01150-CWG	bottom	Pine
B200			male	early	four-sided	01165-CWA	unspecified	Cedar

Table 10.6.
Burials with identified coffin wood

Burial	Age low	Age high	Sex	Temporal Group	Coffin shape	Catalog#	Sample Location	Wood
B202	12	18	female?	early	tapered	01171-CWA	unspecified	White Spruce
B206			undete	mid	rectangle	01180-CWA	unspecified	Red Pine
B208	0.5	1	undete	late	unident.	01182-CWA	bottom	Cedar
B212	4.5	5.5	undete	mid	hexagonal?	01189-CWA	unspecified	Yew
B213	45	55	female	mid	hexagonal	01190-CWA	unspecified	Red Cedar
B214	45	55	male	late	hexagonal	01191-CWA	unspecified	Balsam Fir
B221	30	60	male	early	tapered	01206-CWA	unspecified	Pine
B228			male?	late	hexagonal	01214-CWA	bottom	Cedar
B236	4	5	undete	late	hexagonal	01222-CWA	bottom	Loblolly (Soft Pine)
						01222-CWB and CWC	side	Pine
B237			undete	early	four-sided?	01223-CWA	lid	Red Pine
B242	40	50	female	late	hexagonal	01229-CWA	unspecified	Spruce
B244	5	9	undete	late	four-sided	01231-CWA	unspecified	Cedar
B246	0.5	2.9	undete	mid	four-sided	01234-CWA	bottom	Cedar
B247	35	49.9	male?	early?	unident.	01236-CWA	lid	Cedar
						01236-CWB	bottom	Eastern White Pine
						01236-CWE, CWG, CWI, CWJ	lid	Pine
B259	17	19	female?	late	hexagonal	01249-CWA	unspecified	Cedar
						01249-CWB	unspecified	Pine
B263			undete	early	tapered	01257-CWA	unspecified	Cedar
B265	0.5	1	undete	mid	hexagonal?	01261-CWA	unspecified	Cedar
B268	0	0.5	undete	mid	hexagonal?	01264-CWA	unspecified	Pine
B270			male	mid	unident.	01266-CWA	lid	Cedar
B272	0.25	0.75	undete	early	four-sided	01268-CWA	unspecified	Cedar
B277			undete	mid	unident.	01274-CWA	lid	Eastern White Pine
						01274-CWB	bottom	Cedar
B283	0.33	0.67	undete	mid	hexagonal	01302-CWA	bottom/lid	Red Pine
B290	45	55	male	lmid	hexagonal	01324-CWA	unspecified	Black Walnut
B306	28	44	male	mid	hexagonal	01474-CWA	unspecified	Spruce
B310	44	52	female	mid	hexagonal	01486-CWA	bottom	Red Pine?
B313	45	55	male	late	hexagonal	01516-CWA	bottom	Eastern White Pine
B315	30	40	female	mid	hexagonal?	01519-CWA	lid	Cedar
						01519-CWB and CWC	bottom	Cedar
B316	18	20	female	lmid	hexagonal	01521-CWA	lid	Cedar
B328	40	50	female	mid	hexagonal	01589-CWA	unspecified	Red Cedar
						01589-CWB	lid	Red Cedar
						01589-CWC	side	Cedar
B333	45	55	male	lmid	rectangle	01613-CWA	bottom	Loblolly Pine
B340	39.3	64.4	female	early	tapered	01651-CWA and CWB	side	Eastern White Pine

Table 10.6.
Burials with identified coffin wood

Burial	Age low	Age high	Sex	Temporal Group	Coffin shape	Catalog#	Sample Location	Wood
						01651-CWC and CWE	bottom	Red Cedar
						01651-CWD	lid	Eastern White Pine
B342	25	35	female?	late	hexagonal	01660-CWA	unspecified	Pine
B354	35	45	male	late	hexagonal	01742-CWA	unspecified	Eastern White Pine
						01742-CWB	side	White Spruce
						01742-CWC	lid	Fir
						01742-CWD	unspecified	Fir
						01742-CWE	unspecified	Scots Pine
B363	1	2	undete	late	hexagonal	01825-CWA	bottom	Cedar
B384	25	45	female	mid	hexagonal	01955-CWB	bottom	Red Pine
						01955-CWC	side	Red Pine
B388	29	57	female	early	tapered	02008-CWA	lid	Red Pine
						02008-CWB	lid	Pine
B392	42.5	52.5	male	lmid	rectangle	02039-CWA	unspecified	Cedar
						02039-CWB	side	Pine
B402			undete	early	tapered	02066-CWA	lid/side?	Spruce
						02066-CWB	lid	Cedar
B415	35	55	male	mid	hexagonal	02097-CWA	bottom	Cedar
B419	48	62	male	mid	hexagonal	02104-CWA	side	Spruce

Table 10.10.
Coffin nail locations

Burial	Nail Heads (MNI)	Total	Top Horizontal	Top Vertical	Bottom Horizontal	Bottom Vertical	Corner Joint Head	Corner Joint Foot	Comments
B023	31	63	0	13	21	9	12	8	BVL drawing used
B040	16	29	0	1	15	0	7	6	BVL drawing used
B044	16	20	0	9	11	0	0	0	drawing 1042
B045	2	11	0	0	8	3	0	0	
B048	13	22	0	0	16	0	2	4	
B049	17	17	0	4	12	0	0	1	
B050	18	18	0	4	4	0	4	6	
B053	3	16	0	2	10	1	0	3	
B055	21	22	0	12	10	0	0	0	
B056	21	19	2	8	5	2	1	1	2 top horiz. nails questionable
B057	17	26	3	0	15	1	6	1	
B059	11	13	0	4	3	0	4	2	drawing 1047 and photo
B064		17	2	0	11	0	2	2	
B068	35	49	0	9	21	6	8	5	
B071	43	44	2	0	24	1	9	8	BVL and MS drawings used
B073	14	14	0	2	10	0	2	0	
B077	9	20	0	4	11	0	1	4	counted 2 bottom nails at foot as corner nails
B078	17	25	0	4	7	0	7	7	see photo
B085	12	14	4	0	6	0	3	1	
B086	9	8	0	0	2	0	3	3	1 nail on cranium, 1 nail by r. foot
B090	9	16	0	5	9	0	0	2	see photo
B094	20	28	2	3	9	0	7	7	top horizontal nails not visible in photo
B100	10	13	0	4	3	0	1	5	
B101	32	27	2	6	9	0	4	6	top horizontal nails not visible in photo
B106	6	15	2	0	10	0	2	1	1 nail on coffin floor
B107	5	28	0	12	10	0	2	4	
B115	34	22	0	5	10	0	5	2	
B121	16	14	0	2	8	0	2	2	
B122	28	31	0	4	14	0	5	8	used cross-section drawing
B123	30	13	0	1	9	0	2	1	1 nail outside coffin wall?
B127	7	11	0	2	2	0	3	4	
B128	4	16	0	1	10	0	2	3	
B130	7	20	1	2	8	0	5	4	top horizontal nail not visible in photo
B133	13	12	0	1	8	0	2	1	

Table 10.10.
Coffin nail locations

Burial	Nail Heads (MNI)	Total	Top Horizontal	Top Vertical	Bottom Horizontal	Bottom Vertical	Corner Joint Head	Corner Joint Foot	Comments
B134	13	24	0	3	9	0	6	6	
B135	8	21	2	3	10	0	3	3	top horizontal nails not visible in photo
B138	4	24	0	6	8	0	8	2	see photo
B145	26	33	0	8	14	0	6	5	BVL drawing used
B146		18	0	4	10	0	3	1	
B147	20	20	0	3	15	0	0	2	1 nail on coffin floor
B148	19	27	5	2	7	0	5	8	top horizontal nails not visible in slide; 1 nail by l. radius, 1 nail by distal l. femur
B149	17	19	5	0	8	0	3	3	
B151	16	27	0	1	16	0	6	4	BVL and MS drawings used
B159	19	17	0	0	15	0	2	0	
B216	13	15	2	0	13	0	0	0	
B217	27	14	0	0	11	1	0	2	2 nails near cranium on coffin floor
B218	3	12	2	3	3	0	2	2	
B221	6	20	0	5	2	8	2	3	1 vertical nail in middle of coffin lid, 1 nail by R. shoulder on coffin floor
B225	15	16	1	2	3	1	5	4	Horizontal top nail visible in photo; includes 2 corner joint (head) screws
B226	1								
B230	36	30	4	6	17	1	1	1	top horizontal nails not visible in photo
B235	4	35	0	11	9	8	5	2	
B236	23	20	2	0	14	0	1	3	1 nail near cranium on coffin floor
B238	24	25	0	8	8	0	4	5	
B239	27	12	3	0	6	0	3	0	MS drawin used
B241	21	23	0	3	18	0	2	0	
B242	14	22	0	4	10	5	1	2	
B245	38	20	0	6	9	0	4	1	4 scattered nails on coffin lid in drawing
B254	9	19	0	1	10	0	4	4	
B266	6	40	0	10	16	0	5	9	
B268	11	16	0	5	2	2	2	5	
B282	17	16	0	2	0	6	5	3	
B294	16	18	0	2	9	2	3	2	
B295	39	27	0	5	19	0	1	2	

Table 10.10.
Coffin nail locations

Burial	Nail Heads (MNI)	Total	Top Horizontal	Top Vertical	Bottom Horizontal	Bottom Vertical	Corner Joint Head	Corner Joint Foot	Comments
B299	59	39	0	7	20	3	3	6	
B306	20	23	0	5	12	1	3	2	
B310	6	32	2	3	18	1	5	3	top horizontal nails and vertical bottom nail not visible in slide; 1 nail near left foot
B311	2								
B312	3	17	0	3	2	2	3	7	
B314	35	26	0	3	13	0	7	3	
B315	27	16	0	4	9	1	1	1	plus 1nail near left elbow on coffin floor
B324	1	15	6	0	8	0	1	0	plus 1 nail near right ribs on coffin floor
B332	3	29	0	9	12	0	5	3	Note: nails were missing from laboratory inventory
B334	15	17	0	0	11	0	1	5	MS drawin used
B335	9	38	5	7	17	0	4	5	top horizontal nails not visible in photo
B336	12	9	4	1	1	0	0	3	
B340	37	47	11	13	6	5	5	7	top horizontal nails not visible in photo
B342	22	43	5	4	24	3	5	2	
B346	28	27	1	0	14	5	5	2	
B347	17	18	0	1	10	0	5	2	
B353	6	55	0	15	26	0	7	7	see photo
B354	15	37	0	7	16	0	7	7	
B361	14	14	0	1	2	10	1	0	
B366	29	37	0	11	12	2	6	6	
B376	63	28	0	10	9	2	0	7	
B379	23	31	0	7	12	1	6	5	see photo
B380	29	44	4	9	24	1	3	3	top horizontal nails not visible in slide
B381		8	0	1	4	0	2	1	
B387	11	8	0	1	3	0	3	1	
B388	17	30	5	11	6	0	6	2	top horizontal nails not visible in photo; 2 nails on coffin floor near feet
B389	9								
B390		7	1	4	0	0	1	1	top horizontal nail not visible in photo; 1 nail outside coffin, 2 on coffin floor

Table 10.10.
Coffin nail locations

Burial	Nail Heads (MNI)	Total	Top Horizontal	Top Vertical	Bottom Horizontal	Bottom Vertical	Corner Joint Head	Corner Joint Foot	Comments
B392	29	21	2	4	7	0	4	4	top horizontal nails not visible in slide; 4 nails scattered on coffin floor; 7 vertical nails on lid cross boards
B397	39	41	0	10	20	0	7	4	4 nails scattered on coffin lid
B399	24	27	2	4	12	1	4	4	MS drawing used; top horizontal nails oriented outward (displaced?)
B415	19	31	0	11	12	0	4	4	MS drawing used
B419	14	20	0	8	9	0	2	1	MS drawing used